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NATIONAL PHYSICAL TRAINING.

An Open Debate.

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By Sir LAUDER BRUNTON, M.D., F.R.S.

The advantages of physical training are fully recognised, perhaps even over-estimated, in our public schools, and the English public is beginning to awake to the necessity of extending to the children of the poor the advantage of this training which is now enjoyed by the children of the rich. The Royal Commission on Physical Training for Scotland, in its recently-issued report, recommends that systematic physical drill should be an integral part of the school curriculum, and that due encouragement of sports and games is equally important with it for the development of a healthy body. Mr. John Burns is quite right in thinking that physical training will not do everything to restore the deteriorated physique of the nation. As he very truly says, "The fathers must drink less alcohol and the mothers less tea," and the food and surroundings of the child must be improved from birth onwards. But the boys and girls who are now at school will be the fathers and mothers of the next generation, and if by physical training we can increase their strength they will not have the same craving for alcohol and tea, and they will have more inclination for exercise. They will be able to earn better wages and they will be able to give their children better food than they have had themselves; and in two or three generations we may hope to find the standard of English physique again rising to its proper height. It is of the utmost importance that physical training in schools should be of the proper kind and carefully adapted to the varying wants of growing children at different ages. Physical exercise does not of itself impart strength; it only stimulates the various organs of the body to grow larger

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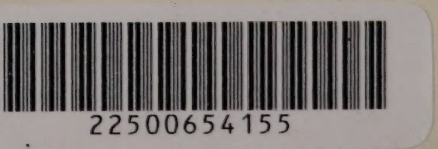
and stronger, but if overdone it has just the contrary action and produces weakness instead of strength. A most instructive lesson is taught us by the observations of a Russian physiologist, Professor Pavloff, who finds that there is no stimulus to digestion so good as appetite. If the food be appetising the digestive juices are poured out in quantity and digestion goes on with the greatest ease. If the food is not appetising, even though it should be in itself digestible, it does not excite secretion of the gastric juice, and so the food is digested with difficulty. In the same way it is of the utmost importance that the great majority of exercises for physical training should excite interest and pleasure in the children, or their effect will not be so satisfactory. Dreary, unpleasant exercise will not only be apt to fail in increasing the child's strength, but is apt to create a dislike for this exercise in particular and for exercise in general, so that the child will only take it when it is forced to do so, instead of employing its spare time in practising those exercises and games which will give it both pleasure and health. All young animals incline to be sportive and fond of exercise, but their movements are different from those of grown-up animals. They are abrupt, erratic, and constantly varied, but as the animals grow up their movements become more steady, persistent, and long-continued. In physical training this should be constantly borne in mind, and the movements or exercises adapted to the age of the child. The animal body is very complex, and physical training ought to be adapted to develop all its parts—the muscles, by which movements are effected; the nerve centres, which co-ordinate the muscles and make them act harmoniously together; the brain, which directs them what to do; the heart, which supplies them with blood; the lungs, which keep the blood aerated; and the digestive system, which supplies the material to repair waste and to maintain growth. Slow exercises requiring a certain tension of the muscles, such as posturing, dumbbells, Indian clubs, and the use of elastic cords tend to increase the strength of the muscles. All kinds of play with throwing and catching balls increase the co-ordination by which eye, body, and limbs work together, while running tends to develop the lungs and heart. The directing power of the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brain is increased by drill, which teaches the children to go through movements at the word of command. The best system of physical education is that which will meet all the necessities of the various organs of the body. Exercises in gymnasia are imperfect, because they tend to develop chiefly the muscles and only to a lesser degree the co-ordinating centres, so that a boy who may be able to perform feats of strength in the gymnasium may be quite unable to catch a ball in the playground. For any thorough system of physical training a playground is essentially necessary, and training should as far as possible be carried out in the open air. In the admirable report already mentioned, the Royal Commission recommends that the wants of an increasing school population should be met, not by additional school-rooms, but by playgrounds, gymnasia, and recreation halls; the hours of study should be shortened, and by a system of relays children should exchange the schoolroom for the recreation-room or playground during a very large part of at least their earlier school life.

The most thorough system of physical education appears to me to be the Swiss, which includes not only exercise and drill, but also games. In the Swiss as well as the Swedish system the muscles are trained by position exercises either with or without light weights, and the brain by drill. Co-ordinating nerve centres are trained by games of ball, and the heart and lungs are developed by running. The attention required to act at once at the word of command in drill involves, at first at least, a considerable amount of nervous strain, and is to be reckoned as mental rather than as bodily exercise. It is very useful in training to habits of prompt obedience and of combined action, but like other lessons is apt to be wearisome to the child, and should not be continued long at a time. Drill with music makes less demand upon the attention and may be continued longer, and takes a half-way place between work and play. The great delight that children naturally take in "playing soldiers" may be utilised, and the pleasure they may thus obtain ought not to be prevented by any foolish fear of "militarism." The games recommended by the Swiss rules are of the same kind as those which are popular with us—tig, cross-tig, leap-frog, hide-and-

seek, and games of ball. These games are carried out in the open air, and as many players as possible take part in them. According to the rules of the game, no scholar is to be idle, and the masters watch the games as much as the exercises in order to see the effect of them upon the scholars and to prevent those who are weakly being injured from overstrain. It is especially in games involving severe or long-continued strain that injury is apt to take place, but even the slight exercise of posturing or drill makes an extra demand upon the child's powers and creates a need for more food. When children are badly fed, physical training, even of the right kind, may do harm rather than good. A good many years ago the nation decided that it could not afford to have its citizens ignorant, and if the parents could not pay for the children's education the State must supply the funds to do it. The nation can as little afford to have its citizens decrepit as ignorant, and if parents cannot supply the food necessary to enable their children to benefit by physical training it appears to me only logical to demand that they shall have the necessary food supplied to them gratuitously. But this should only be done when it is absolutely necessary, and, as the Royal Commission points out, the desired object may be in many cases attained by the parents paying a small fee, for which the school might supply a meal more wholesome, more nutritious, and—what is very important—more appetising than could be provided at the same cost at home.

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